



# COUNTY OF LOS ANGELES

## DEPARTMENT OF PUBLIC WORKS

*"To Enrich Lives Through Effective and Caring Service"*

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December 29, 2005

TO: Each Supervisor

FROM: Donald L. Wolfe  
Director of Public Works

### **INFRASTRUCTURE REPORT CARD BOARD MOTION OF NOVEMBER 1, 2005, ADDITIONS TO THE AGENDA, 64-A**

At the November 1, 2005, meeting, your Board requested Public Works to review the Los Angeles County Infrastructure Report Card prepared by the Los Angeles Section of the American Society of Civil Engineers (ASCE) and report back.

ASCE is a national engineering society with more than 137,000 members. The Los Angeles Section has nearly 4,000 members in ten Southern California counties. This past year ASCE convened a study group of civil engineers to assess the condition of our region's public works infrastructure. Participants included the Cities of Los Angeles, Burbank, Santa Clarita, Pasadena, Paramount, Long Beach, West Hollywood, and Santa Monica; Caltrans; Metropolitan Water District; Long Beach Water Department; Central and West Basin Municipal Water Districts; Ports of Los Angeles and Long Beach; County Sanitation Districts; Army Corps of Engineers; State Department of Water Resources; Metrolink; the County of Los Angeles Department of Public Works; and private engineering firms. These public works professionals evaluated infrastructure condition trends and condition status and made recommendations for infrastructure preservation and improvement. As a result of this analysis, the report card was prepared to summarize the findings.

In conjunction with the ASCE Report Card, which assessed infrastructure conditions Countywide, we prepared a 2005 Report Card focusing on Public Works-owned or maintained facilities. The attached report gives you an executive overview of the condition of the Public Works infrastructure. We are pleased to inform you that the overall grade for our Public Works infrastructure is a C+, which is equal to the overall ASCE grade for Los Angeles Countywide infrastructure and higher than the overall ASCE grades for Orange County and the nation. Public Works-owned or maintained infrastructure was graded equal to or greater than the others in almost every category. See Attachment A for a relative assessment of the condition of Public Works-owned or maintained infrastructure.

In order to bring Public Works-owned or maintained infrastructure up to an overall recommended grade of B, it is estimated that an initial investment of between \$6.7 and \$304 billion would be necessary. This wide range is largely due to the uncertainty of costs to improve urban and storm water runoff quality. The annual investment costs necessary to maintain the infrastructure at a grade of B is estimated to range from \$551 to \$827 million. See Attachment B for funding required for each category of infrastructure.

Although the attached 2005 Infrastructure Report Card for County of Los Angeles Public Works Facilities describes the condition and funding needs for Public Works-owned or maintained infrastructure, there are a few areas that merit special mention:

- Urban Runoff – Urban runoff's D grade is the lowest of any of the infrastructure categories. To improve upon the grade will be extremely expensive, but just how expensive is a matter of great debate. On the high end, a 2002 University of Southern California study entitled An Economic Impact Evaluation of Proposed Storm Water Treatment for Los Angeles County estimated costs up to \$284 billion just to comply with the anticipated Total Maximum Daily Load (TMDL) regulations alone. This estimate reflects the cost to treat runoff from 70 percent to 97 percent of the annual rainfall in the County through a reasonably plausible engineering approach of constructing and operating/maintaining 65 new collection and treatment facilities. Less expensive scenarios rely less on the physical treatment of storm runoff and more on nonstructural, institutional controls such as increased street sweeping. Another study prepared by the University of Southern California in 2004 entitled Alternative Approaches to Storm Water Quality Control estimated costs as low as \$3 billion for this approach. The wide range of cost estimates reflects the large uncertainty in how to comply with TMDLs and other water quality regulations. To reach the recommended grade, additional funding of \$3 to \$300 billion is required. There is an annual funding shortfall of up to \$235 million.
- Streets and Highways - The overall grade is a combination of pavement condition and traffic congestion. The condition of the pavement has decreased to a C from a C+ in 2002 as a result of the diversion of Proposition 42 funding to solve State budgetary problems and also due to the extremely heavy and damaging storms of this year. The pavement condition will continue to decline if the Proposition 42 funding to cities and counties is not fully restored. We strive to mitigate increases in congestion at Public Works-controlled intersections by monitoring their performance and altering intersection controls, such as signal timing, when appropriate. In addition, we require developers to provide intersection improvement to offset the impacts of increased traffic generated by new projects. In the near future, we plan to study several congested corridors throughout the County and recommend possible

improvements. To reach the recommended grade, additional funding of \$750 to \$760 million is required. There is an annual funding shortfall of \$130 to \$140 million.

- Dams - Most of Public Works' dams were built over 60 years ago. The State Department of Water Resources, Division of Safety of Dams (DSOD), has placed operational restrictions on those dams found to be inadequate with respect to their ability to withstand a maximum seismic event or to safely pass a probable maximum flood without dangerous overtopping. We have an ongoing program to rehabilitate those dams that fail one or both of these criteria. Of 12 dams restricted by DSOD, 6 have been rehabilitated and returned to unrestricted operations, while 6 others are designated for future rehabilitations. To reach the recommended grade, additional funding of \$150 to \$180 million is required. There is an annual funding shortfall of up to \$2 million.

As part of Public Works' Strategic Plan, we identified Quality of the County's Infrastructure as a critical issue. Our implementation of Action Plan 1, Infrastructure Assessment, has already resulted in defining the infrastructure review process, the condition assessment process, and the development of the least-life-cycle cost analysis. Quality and sustainability of Public Works infrastructure continues to be a central priority in the Public Works' Strategic Plan.

Specific recommendations for infrastructure improvements are in the attached Report Card for Public Works facilities. The majority of the recommendations concern funding. The repair and rehabilitation of existing infrastructure and construction of critically needed infrastructure will take a substantial increase in revenue.

If you have any questions regarding this matter, please contact me or your staff may contact William Higley, Deputy Director, at (626) 458-4016.

WB

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Attach.

cc: American Public Works Association, Southern California Chapter  
American Society of Civil Engineers, Los Angeles Section  
Chief Administrative Office  
Executive Office

## INFRASTRUCTURE REPORT CARD COMPARISON - 2005

Subject	GRADE			
	DPW Owned/ Maintained Facilities	ASCE- Los Angeles Section	ASCE- Orange County	ASCE- National
Bridges	B-	C	C+**	C
Dams	B-	B-	N/A	D
Drinking Water (Infrastructure)	C+	C+	B	D-
Flood Control	B	B	C*	N/A
Streets and Highways / Roads	C	D+	C+**	D
Transit	B-	C+	C+**	D+
Urban Runoff	D	D	C*	N/A
Wastewater System	B-	B	C+	D-
<b>OVERALL GRADE =</b>	<b>C+</b>	<b>C+</b>	<b>C</b>	<b>D</b>

\* The subject category Urban Runoff / Flood Control received a "C-" for Orange County.

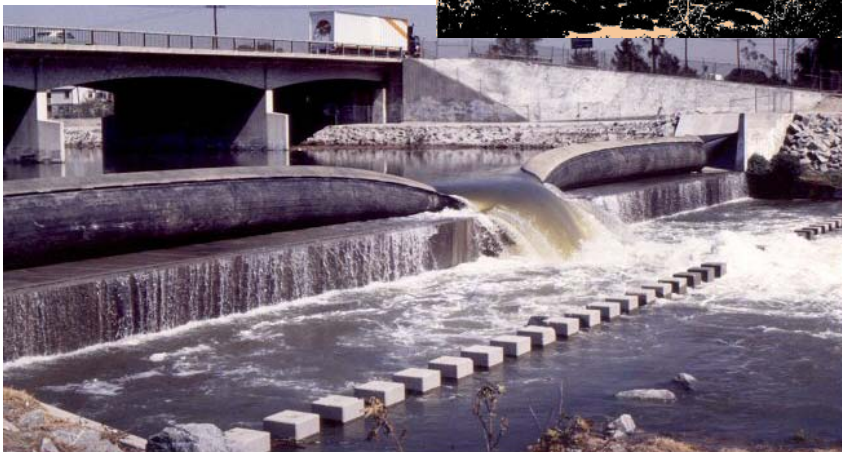
\*\* The subject category Transportation (made up of bridges, highways, and transit) received a "C+" for Orange County.

## **INVESTMENT COST TO REACH AND MAINTAIN RECOMMENDED GRADES FOR LOS ANGELES COUNTY DPW-OWNED AND/OR MAINTAINED FACILITIES**

Facility	Current Grade	Recommended Grade	Additional Investment to Achieve Recommended Grade	Annual Funding Required to Maintain Recommended Grade	Annual Funding Available
Bridges	B-	B	\$60 - \$70 Million	\$10 - \$11 Million	\$7 Million
Dams	B-	B	\$150 - \$180 Million	\$31 - \$32 Million	\$30 Million
Drinking Water (Infrastructure)	C+	B	\$260 - \$265 Million	\$39 - \$40 Million	\$38 Million
Flood Control	B	B	\$2 - \$2.5 Billion	\$190- \$210 Million	\$137 Million
Streets and Highways	C	B	\$750 - \$760 Million	\$170 - \$180 Million	\$40 Million
Transit	B-	B	\$35 - \$40 Million	\$17 - \$19 Million	\$14 Million
Urban Runoff	D	A	\$3 - \$300 Billion *	\$65 - \$300 Million	\$65 Million
Wastewater System	B-	B	\$400 - \$450 Million	\$30 - \$35 Million	\$25 Million
<b>TOTAL INVESTMENT =</b>			<b>\$6.7 - \$304 Billion</b>	<b>\$551 - \$827 Million</b>	<b>\$353 Million</b>

\* The initial investment for Urban Runoff is uncertain due to the fact that we have limited experience in actually implementing the TMDLs so it is difficult to estimate the total cost. There is also widespread agreement that the technologies needed to comply with many of the TMDLs does not presently exist nor is there sufficient existing public right of way to site the necessary infrastructure.

# 2005 INFRASTRUCTURE REPORT CARD FOR COUNTY OF LOS ANGELES PUBLIC WORKS FACILITIES



**Prepared by:** County of Los Angeles  
Department of Public Works



**2005 Infrastructure Report Card for  
Los Angeles County Public Works Facilities**

**Overall Grade is a C+**



Subject	Grade	Comments
Airports	<b>B-</b>	The DPW-owned airport infrastructure meets or exceeds current FAA standards. In order to maintain this status, investment in capital improvements is required over the next 5 years. Significant annual investment is required for maintenance of the existing infrastructure.
Bridges	<b>B-</b>	The DPW-owned and maintained bridges will require investments necessary for replacement, widening, deck reconstruction, and bridge approach work. These changes will bring our bridges up to today's standards for traffic volume and increased vehicle size and weight.
Buildings	<b>C-</b>	Although most DPW-owned buildings get repaired shortly after any of their systems break down, more money needs to be set aside for maintenance routines as well as buildings replacement. Replacing buildings over 50 years old with modern design standard buildings will reduce the overall maintenance cost and raise the average buildings grade to a B.
Dams (see Flood Control)	<b>B-</b>	The DPW-owned dams are operated and maintained to be safe, functional and structurally sound. A significant investment is required to restore some of our dams to their full operational capacity and continue to assure dam safety.
Drinking Water (Infrastructure)	<b>C+</b>	The DPW-owned drinking water infrastructure will face major challenges over the next 20 years. Major goals are implementing a systematic approach to finance the replacement of older pipelines and equipment, and comply with stringent water quality standards. Water supply cutbacks will require investment in new technologies for recycling, ocean water desalination and water use efficiency.
Flood Control	<b>C</b>	The DPW-owned Flood Control District system is relatively new and is maintained regularly, providing adequate flood protection to residents. Significant ongoing annual investment is needed to replace older systems and continue ongoing and preventive maintenance.
Streets and Highways	<b>C</b>	The DPW-owned and maintained roadway pavement is in good condition and traffic congestion is consistent with the national trend. A significant investment is needed for capacity enhancement projects to reduce congestion.
Street Lighting	<b>B-</b>	Capital investment in DPW-owned and maintained street lights is necessary to meet current standards of energy efficiency, reliability, and maintainability.
Traffic Signals	<b>C</b>	DPW-owned traffic signals are in good physical condition. Capital investment in Intelligent Transportation System technologies and ongoing annual investment in operation and maintenance are necessary to provide optimal operating performance.
Transit	<b>B-</b>	The conditions of transit vehicles and the transit facilities owned and maintained by the County are fair. Investment is needed to expand existing and acquire new Park and Ride lots and improve the security at the lots. Investment is also needed to procure newer vehicles that will improve customer service for transit patrons.
Urban Runoff	<b>D</b>	The County's mandated responsibility for meeting State requirements to improve the quality of urban runoff and protect our environment presents major challenges. The cost to the County is significant and beyond our current budgets.
Wastewater System	<b>B-</b>	The County Sewer Maintenance Districts infrastructure is relatively new and maintained regularly. Significant ongoing annual investment is needed to replace older systems and continue ongoing and preventive maintenance.
Water Conservation	<b>C</b>	The DPW-owned water conservation system is in fair condition. Significant ongoing annual investment is needed to ensure that County residents have a sustainable supply of water.

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# *Issue* **BRIEF**

## **AIRPORTS**

### Introduction

Grade

**B-**



The County of Los Angeles Department of Public Works owns five General Aviation (GA) airports, which are administered by the Public Works' Aviation Division. These airports are: Brackett Field Airport, located in the City of La Verne; Compton/Woodley Airport, in the City of Compton; El Monte Airport, in the City of El Monte; General Wm. J. Fox Airfield, in the City of Lancaster; and Whiteman Airport, located in the Pacoima area of the City of Los Angeles. The airports provide GA services to the public and represent an essential link in the County's Emergency Preparedness Program. The airports offer strategically located home bases for air ambulances, Sheriff's Department aircraft, and aerial fire-fighting equipment, deemed vital in times of emergency. The Aviation Division is committed to provide safe and efficient airports and services to the users of the County airports. Committed to achieve this result, Aviation Division implements methods and assigns personnel to effectively monitor the airport management contract and coordinate all phases of infrastructure development and maintenance. The Aviation Division aggressively seeks and secures FAA funds for eligible Capital Improvement Projects.

The capacity of the Public Works-owned airports reflects the economic trends of the aviation industry. These trends fluctuate in relation to factors that include aircraft-manufacturer liability, cost of insurance premiums, costs for support services, cost of commodities, and government restrictions/regulations. The total number of aircraft operations (takeoffs and landings) at the Public Works-owned airports recorded by the Federal Aviation Administration (FAA) for Fiscal Year 2004/05 was 892,421. The runways within the County airport system have the capacity to accommodate nearly twice this amount. The amount of aviation fuel sold at the airports during Fiscal Year 2004/05 totaled 1.2 million gallons, and the airports accommodated more than 1,900 based aircraft. This data is significant because it indicates how Public Works-owned airports provide relief for congested, commercial-service airports of the region, such as LAX, Bob Hope, and Long Beach airports.



### Current Condition

The infrastructure of the Public Works-owned airports is constantly being improved. Aviation Division is responsible for administering and overseeing the airport capital improvement projects. The objective of these improvements is to enhance operational safety and security of the airports' infrastructure and facilities for the airport users and, equally important, to bring the airports into compliance with Federal Aviation Regulations. Capital improvements are financed with Federal and State grants, with matching funds coming from the Aviation Enterprise Fund. Currently, the airports meet or exceed FAA safety and operational standards. Even during a period of gradual decline in local GA activity and demand over the past 10 years, the County of Los Angeles aggressively pursues FAA and California Division of Aeronautics grant funding to maximize improvements to its five airports. Current capital improvement projects include pavement rehabilitation of the ramp area at General Wm. J. Fox Airfield, an access road on the west end of Brackett Field Airport, and replacement of perimeter fencing at El Monte and Compton/Woodley airports. In addition, extensive pavement rehabilitations at all five airports have been completed with ongoing slurry-seal maintenance every 5 to 6 years. Over the past 10 years, well over \$33 million of capital improvement and maintenance projects have been completed at the five airports.

#### *Component Grading*

Component	Percent Meeting Grade					Overall Grade
	A	B	C	D	F	
Runways & Taxiways	60	40				<b>A-</b>
Aircraft Parking Ramps	5	55	40			<b>B-</b>
Auto Parking Lots	20	60	20			<b>B</b>
Airfield Lighting	100					<b>A</b>
Infields – Grading & Drainage		40	40	20		<b>C+</b>
Perimeter Fencing		80	20			<b>B-</b>

**NOTE:** for information on the condition of airport terminals and hangars, see *BUILDINGS* section.

The grades are defined below:

<b>Grade</b>	<b>Definition</b>
<b>A</b> Excellent	No to very few capacity, structural, or operational problems. Components will meet or exceed current FAA design standards. Components will require very little to no repairs within the next 10 to 20 years.
<b>B</b> Good	Few capacity, structural, or operational problems exist. Components can be brought up to current design standards within 5 years. Components will require some repairs within the next 5 to 10 years. No major repairs or reconstruction is anticipated. Pavements have minor cracking.
<b>C</b> Fair	Some capacity, structural, or operational problems exist. More than one-half of the component meets current design standards. Components will require major repairs in the next 5 to 10 years and currently require extensive annual or seasonal maintenance. Major repair or reconstruction needed within five to 10 years. Up to 50 percent of pavements show cracking, spalling, raveling, or potholes, etc.
<b>D</b> Poor	A significant number of capacity, structural, or operational problems exist. Less than one half of the component meets current design standards. Extensive ongoing maintenance is required to maintain serviceability of the component, and major repair or reconstruction is anticipated in less than five years. More than 50 percent of the pavements show cracking, spalling, raveling, potholes, or some evidence of base failure.
<b>F</b> Failing	The component has failed or is facing imminent failure. Less than one-half of the component meets current design standards. Component requires major repair or reconstruction to become serviceable. Pavements show evidence of total failure of base materials.

### **Recommended Policy**

Public Works aggressively pursues Federal and State grants to fund infrastructure modernization and capital improvements on the airports. Revenues obtained from the operation of the airports are applied to the Aviation Enterprise Fund and are exclusively used for the operation, maintenance, and improvement of the airports. Prioritization of capital improvements is based on the level of serviceability and forecasted demand. Public Works recommends maintaining airport infrastructure at the following minimum level:

<b>Component</b>	<b>Recommended Grade</b>
Runways & Taxiways	B
Aircraft Parking Ramps	B
Auto Parking Lots	B
Airfield Lighting	A
Infields – Grading & Drainage	C
Perimeter Fencing	B

Currently, the overall grade for runways and taxiways exceeds the recommended grade level. This is a result of recent reconstruction and/or overlay of runways at Brackett, Fox, and Whiteman airports. At the present time, all runways and taxiways require only routine maintenance (every 3 to 5 years), and no major repairs are anticipated for the next ten years.

### **Investment Needs**

Over the next 5 years, approximately \$8.4 million will be needed to finance projected capital improvements for the 5 airports. Most of the funding will be grants from the FAA's Airport Improvement Program and California's Aid to Airports Program, with the remaining matching funds obtained from the County's Aviation Enterprise Fund.

### **Consequences**

An estimated \$20 to \$30 million is needed to bring all components of the airports to the recommended grades. Failure to meet the recommended level of maintenance unnecessarily exposes the County to potential liability. It would increase the cost of repairs to facilities that were allowed to deteriorate as a result of postponing required maintenance. Failing to maintain the facilities at the recommended level could jeopardize relationships with funding agencies, thereby limiting our ability to secure grant funding for future capital improvement projects. A final consequence is that airport users would get less service at increased cost.

# Issue **BRIEF**

## BRIDGES

### Introduction

Bridges: Public Works maintains 257 National Bridge Inventory (NBI) bridges and 169 Non-NBI bridges. In addition to these, we share ownership of 37 NBI bridges and 39 Non-NBI bridges with local jurisdictions. The bridge condition grade is based on NBI bridges solely under the jurisdiction of Public Works. Federally trained bridge inspectors inspect all NBI bridges biennially. A sufficiency rating is determined based on their findings. The sufficiency rating is based on four separate factors: Structural Adequacy, Serviceability and Functional Obsolescence, Essentiality for Public Use, and Special Reductions. Maintenance and improvement of the bridges is done by both force account and contracted efforts. The programs include Bridge Maintenance and Inspection, Construction of Bridges and Tunnels, Condition and Construction of Bridges and Tunnels, and Capacity and Construction of Bridges and Tunnels - Operations. Improvement and replacement of NBI bridges may be eligible for 80 percent Federal funding

Grade

**B-**



### Current Conditions

Based on the immediate knowledge of Road Maintenance, Bridge Section; experienced engineers; and field superintendents, the overall grade is as follows:

	Percent Meeting Grade					Overall Grade
	A	B	C	D	F	
Bridge	39	23	28	5	5	B -

The grade for bridges is defined as follows:

Grade	Definition
A Excellent	Facility in new, near new, or recently improved condition.
B Good	Facility showing minor damage or deterioration that does not affect serviceability.
C Fair	Facility has broader or more serious damage or deterioration that should be addressed to maintain serviceability.
D Poor	Facility has widespread or serious damage or deterioration that must be addressed to maintain or restore serviceability.
F Very Poor	Facility has serious or critical damage or deterioration that must be addressed to restore serviceability. Facility may require service level reduction or closure until work to restore serviceability is complete. Required work may include replacement.

### Current/Future Funding

EXPENDITURE	FY 2004 - 05 ACTUALS	FY 2005 - 06 ESTIMATE	FY 2006 - 07 PROJECTED	3-Year Total
Bridge Maintenance & Inspection	\$ 1,618,839	\$ 1,387,300	\$ 1,451,000	\$ 4,457,139
Construction of Bridges and Tunnels	\$ 1,818,027	\$ 7,922,800	\$ 6,849,000	\$ 16,589,827
	\$ 3,436,866	\$ 9,310,100	\$ 8,300,000	\$ 21,046,966

### Recommended Policy

Public Works recommended and actual bridge infrastructure grades are shown below. The recommended grade reflects our professional judgments regarding safe, cost-effective, and least-life-cycle cost asset management. The actual grade reflects the actual revenues that have been available for bridge improvement projects over the last several years.

	Actual Grade	Recommended Grade
Bridge	B -	B

### Investment Needs

To attain the infrastructure condition levels, recommended bridge facilities would require an investment of approximately \$63.3 million above and beyond the annual cost of maintenance and inspection. A 5-year program to meet these needs would require an annual investment of at least \$13 million.

### Consequences

Although the funding for maintenance and inspection has been steady for the last few years, the investment in reconstruction and replacement has not kept up with the needs. With regular maintenance, bridges have a life span of 50 to 70 years, but, even well-maintained bridges eventually need major rehabilitation.

# Issue **BRIEF**

## BUILDINGS

Grade

**C-**



### Introduction

The County of Los Angeles Department of Public Works is housed in approximately 400 buildings distributed throughout the County of Los Angeles in more than 90 facilities. Facility buildings consist of offices for employees, repair and maintenance buildings, storage warehouses and sheds, and airport terminals and hangars. The age of these buildings varies from recently built to over 90 years in age. The construction type of these buildings also varies from Type I, steel and concrete, to Type V, wood construction.

Throughout the years and due mostly to insufficient funding, Public Works' buildings have received mixed attention to routine and planned maintenance. Only a small portion of these buildings has been maintained on a regular basis and only enough to stop a constant degradation in their condition. The consequence of this deferred maintenance is that the average condition grade of these buildings is **C-** and the majority of maintenance work is generated as a result of breakdowns leading to costly emergency repairs instead of planned maintenance routines.

An inventory of vertical structures was conducted between February and June of 2005. The inventory consisted of a field verification of buildings that were listed on the Maintenance Management System (MMS). The pre-survey inventory on MMS consisted of old records accumulated throughout the years from either Chief Administrative Office data or different divisions' records. In the latest survey/inventory conducted, the old MMS records were field verified and new buildings were added to the list while other buildings that were demolished were removed from it.

In addition to verifying the building's address and MMS number, the inventory consisted of a field measurement of the building square footage, number of stories, type of construction, roof framing type, roofing material, exterior wall types, foundation type, year of last planned renovation, usage type, list of tenants, and approximate number of personnel. Photos documenting the building and its conditions were taken and a diagram of the building was sketched.



## Current Condition

A preliminary condition assessment of the buildings occurred at the same time the inventory took place. Needed repairs were noted and costs associated with those repairs were estimated and documented.

What is known at this time is that due to budgeting constraints, most Public Works buildings have not been properly maintained. Building systems are failing at a relatively high rate resulting in elevated repair costs and downtime and inconvenience to both County employees as well as to the public. There are also instances of termite and dry rot, which if untreated could lead to rapid degradation of the buildings. Many buildings have undesirable appearance, which could be remedied through inexpensive painting routines.

Table 2 below shows the buildings conditions and the overall grade. Table 3 shows buildings maintenance expenditures for the last three years. This elevated buildings repair costs is partially justified by the high number of buildings in Categories C and D.

The next step is to conduct a more detailed examination of each building for the purpose of assigning individual grades consistent with Table 1 below. Once buildings are assigned grades based on their physical conditions, a more accurate overall Grade Point Average can be established for the buildings infrastructure.

**Table 1 Infrastructure Condition Assessment Criteria - Buildings**

<b>Grade</b>	<b>Capacity</b>	<b>Physical Condition</b>
<b>A (VERY GOOD)</b>	<b>N/A</b>	<b>Building is less than 5 years old. Building is in good physical condition with mostly routine maintenance and very infrequent repairs.</b>
<b>B (GOOD TO FAIR)</b>	<b>N/A</b>	<b>Building may be 5 to 20 years old. Building appears in good condition through regular maintenance or recent remodel. Repairs are rather infrequent.</b>
<b>C (FAIR TO POOR)</b>	<b>N/A</b>	<b>Building may be 20 to 50 years old. Building is still functional, however, some repairs are needed. More frequent maintenance routines are urged.</b>
<b>D (VERY POOR)</b>	<b>N/A</b>	<b>Building may be over 50 years old. Building requires major repairs and could have substandard conditions in many aspects including structural deficiency. Budgeting for a replacement is urged.</b>
<b>F (FAILURE)</b>	<b>N/A</b>	<b>Building is beyond economical repair. It should be replaced ASAP.</b>
<b>NR (NOT RATED)</b>	<b>N/A</b>	<b>Building is not rated.</b>

**Table 2 Buildings Condition Percentage and Overall Grade**

Component	Percent Meeting Grade						Overall Grade
	A	B	C	D	F	NR	
<b>Buildings Condition</b>	<b>2%</b>	<b>7%</b>	<b>50%</b>	<b>40%</b>	<b>1%</b>	<b>N/A</b>	<b>C –</b>

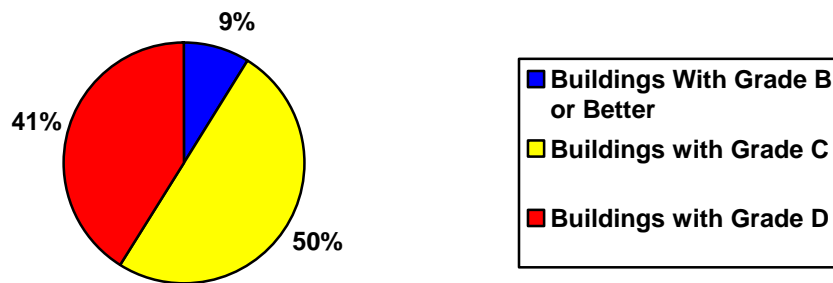
In addition to the repair needs already established for each building, analysis of past expenditures will establish future tendencies for both repairs and preventative maintenance needs.

**Table 3 Buildings Maintenance For Last Three Years**

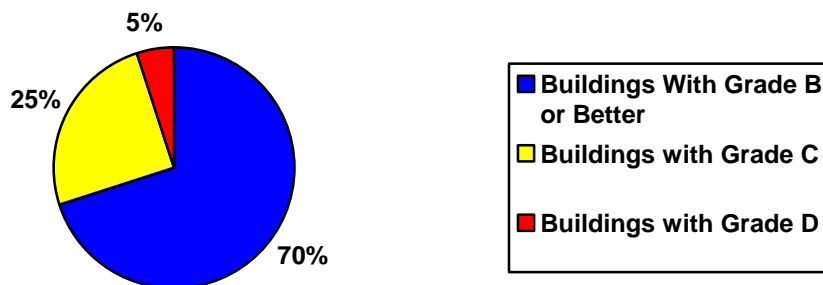
Expenditures	2002-2003	2003-2004	2004-2005	Total for Last 3 Years
<b><u>Maintenance and Repairs for Buildings</u></b>	<b>\$7,887,000</b>	<b>\$7,735,000</b>	<b>\$7,009,000</b>	<b>\$22,631,000</b>
<b>New Construction</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total</b>				

### **Recommended Condition**

Public Works buildings should have the following goal: 70 percent of the buildings with grade B or better, not more than 5 percent of the buildings with grade D, and no building with a grade less than D as shown in the chart below and compared to the present condition.



**Chart 1 - Present Condition of Buildings**



**Chart 2 – Recommended Condition of Buildings**

### Investment Needs

Table 4 shows projected maintenance and repair costs for the next 10 years based on the average past year expenditures. It also shows new construction cost to meet the goal set in the previous paragraph. The overall expenditures should start decreasing after a period of reconstruction since most buildings will have a grade B or better and would require fewer repairs.

**Table 4 Projected Expenditures For Next 10 Years to Meet Goal**

<b>Expenditures</b>	06/07	08/09	10/11	12/13	14/15	TEN YEARS TOTAL
<b>Maint. &amp; Repairs</b>	7 M	7M	6 M	6 M	5 M	62 M
<b>New Construction</b>	9 M	9 M	9 M	9 M	9 M	90 M
<b>Total</b>	16 M	16 M	15 M	15 M	14 M	152 M

### Consequences

The consequences for maintaining building conditions at the present level include higher repair costs and further deterioration of the building systems leading to more frequent systems breakdown and down time in addition to inconvenience for both County employees and the public. Furthermore, it is likely that the replacement cost for buildings will go up since further deterioration of buildings with grades C can cause them to become D or F requiring total replacement of the building.

# Issue **BRIEF**

Grade

**C+**



## DRINKING WATER (INFRASTRUCTURE)

### Introduction

The County of Los Angeles owns, operates, and maintains 5 County Waterworks Districts and the Marina del Rey Water System (Districts), which provide water service to more than 190,000 people through 60,100 service connections in the Antelope Valley, Malibu, Marina del Rey, Acton, Val Verde, and Kagel Canyon areas. The Districts use both treated surface water from the Colorado River and State Water Project and local groundwater to supply potable water to their customers. While the larger mains that convey imported water to the Districts are generally in good condition, challenges still persist in funding the replacement of the smaller, local water distribution pipelines, wells, pump stations, and storage reservoirs.

### Rating Weights and Components Assessed

The assessment of each of the facilities of the five Districts is based on the following elements and rating weights:

1. Condition of Facilities (30 percent weight)
2. Capacity of Facilities (40 percent weight)
3. Operation of Facilities (30 percent weight)

One or more of the following components were assessed to prepare rating for each of the elements graded:

- Drinking Water Supply: The Districts use both treated surface water from the Colorado River and State Water Project and local groundwater to supply their customers. Maintaining an adequate, reliable water supply for each District, especially for those with significant population growth, is an ongoing challenge. We evaluated the reliability and water quality of these water supply sources.
- Pipelines (water mains): The Districts operate and maintain approximately 1,118 miles of water mains. Most of the Districts' pipelines are made of asbestos cement, cast iron, ductile iron, or steel pipe. Pipelines were evaluated based upon their remaining useful life (based on age and pipe material), number of leaks per 5 miles per year (using average of 3 years), and site stability based on both potential for liquefaction and earthquake-induced landslides. The site stability criteria were used to address the special case of Waterworks District No. 29, Malibu, where landslides in the area create conditions for constant maintenance and repair.

- Pump Stations, Valves And Fittings: The Districts operate and maintain, 67 pumping stations, 75 pressure regulating stations and countless valves, fittings and other appurtenances. The pump stations were rated based upon age compared to the useful life of 50 years, conditions of the pumps and equipment, efficiency of pump, and overall facility condition.
- Groundwater Wells: The Districts operate and maintain 43 groundwater wells in District No. 40 Antelope Valley, three wells in District No. 37, Acton, and three wells in District No. 21, Kagel Canyon. Wells were evaluated based upon production efficiency, water quality, production capacity, sanding and slot visibility age, and casing condition.
- Storage Reservoirs: The Districts operate and maintain a total of 93 gravity storage reservoirs and 20 forebay tanks with a total storage capacity 90 million gallons. The reservoir ratings were based on such factors as: age of structure, condition of inlet and outlet piping, condition of site and facility site stability, and conditions of the access features. The data used for this evaluation was obtained from the Water Storage Tank Inspection Report which was prepared as part of the Districts' Reservoir Maintenance Program.
- Water Use Efficiency: The Districts have been a signatory to a Memorandum of Understanding (MOU) for Water Conservation since April 1996, which commits them to make a good faith effort to implement agreed-upon Best Management Practices (BMPs) for water conservation. Water Use Efficiency is a component used to measure our implementation of the BMPs.

### **Current Conditions**

Each District's infrastructure was evaluated separately and given a rating based on feedback from the Districts' engineers, operators, and maintenance supervisors. Grades for each element and component were assigned using the definitions in Table 1.



Table 1

Grade	Definition
A Excellent 90 -100	None to very minor capacity, condition or operational problems are noted. The system enables the Districts to meet current as well as projected peak flow demands and all Federal and State requirement for water quality. The system may only require routine maintenance. All the system's facilities meet the Districts' design standards and may not need major repairs within 30 to 50 years (depending on component evaluated)
B Good 80 - 90	Minor capacity, condition, or operational problems. The system enables the Districts to meet current peak flow demand and all Federal and State water quality requirements. Almost all of the system's facilities meet the Districts' design standards and most of the system's facilities may not need major repairs within 20 to 40 years. Only routine maintenance requirement.
C Fair 70 - 80	Moderate capacity, condition or operational problems are noted. The Districts are able to meet regular seasonal demands. The Districts meet all Federal and State water quality requirements. However, only 50 percent to 75 percent of the system's facilities meet the Districts' design standards. About half of the system's facilities need major repairs or upgrades within the next 30 years.
D Poor 60 - 70	Significant number of capacity, condition, and operational problems are noted. The system enables the Districts to meet wet season (Winter) demand but not peak flow in the summer. The system may require repeated observation, maintenance, and repair. Less than half of the system's facilities meet the Districts' design standards. Minor water quality violations were noted. Most of the system's facilities will need major repairs within the next 10 to 50 years.
F Fail < 60	Severe capacity, condition, and operational problems are noted in most of the system's facilities. Unable to provide sufficient supply. System is failing or facing imminent failure. Less than half of the system's facilities meet the Districts' design standards. Most of the system's facilities will need major repairs and replacement immediately.

The overall grades for conditions, capacity, and operation of facilities of each District were calculated by assigning weights as shown in Table 2.

Table 2

Components	Unit Component in each District (% of total)						Total
	21	29	80*	36	37	40	
Delivery System							
◦ Pump Stations	2 (2.9)	32 (45.7)	0 (0)	2 (2.9)	4 (5.6)	30 (42.9)	70
◦ Miles of Main	7 (0.7)	194 (18.6)	12 (1.1)	31 (3.0)	49 (4.7)	752 (71.9)	1045
Storage Facilities	0.45 (0.5)	20.98 (22.5)	0 (0)	2.75 (2.9)	3.73 (4.0)	65.54 (70.1)	93.45
Groundwater Wells	3 (6.1)	0 (0)	0 (0)	0 (0)	3 (6.1)	43 (87.8)	49
Operation							
◦ Water Quality**	1 (10)	1 (10)	1 (10)	1 (10)	1 (10)	5 (50)	10
◦ Maintenance/repair & funding levels***	246 (0.4)	7335 (12.2)	291 (0.5)	1310 (2.2)	1341 (2.2)	49,572 (82.5)	60,095
◦ BMP implementation***	246 (0.4)	7335 (12.2)	291 (0.5)	1310 (2.2)	1341 (2.2)	49,572 (82.5)	60,095

\* “80” refers to the Marina del Rey Water System.

\*\* Weights based on the number of Department of Health Services system classification.

\*\*\* Weights based on the number of service connections.

### Final Grade

Each District was first evaluated individually to reach a weighted overall grade of C+ (77.9 percent) for the Districts as shown in Table 3.

The overall conditions of the Districts’ facilities were rated D+ (66 percent). Imported water conditions were generally in fair to good condition. Local water conditions were generally in poor to good condition depending on existing condition and the availability of funding for improvement. There are concerns over the condition of older piping and/or age and condition of the well collection facilities in some of the Districts where funding is marginal. Some Districts do not have groundwater wells; therefore, improvements are needed to provide redundancies and secondary source of supply.

Availability of adequate supply was rated B (82 percent). Water supply availability can fluctuate depending on hydrogeology and climatic conditions as well as the increase in water demand that is expected to increase with the growth in urban development. The rating for the capacities of pipelines, pump stations and storage facilities ranged from D (50 percent) to B (80 percent) yielding an over all grade of C+ (78.5 percent) for capacity of the Districts’ facilities. Expanded and upgraded water storage, and water conveyance facilities, new wells and a secondary source of water supply are needed to meet projected demands in the Districts.

Table 3

LOS ANGELES COUNTY WATERWORKS DISTRICTS				Grade C+
Element Grade	Components	Average Score	Max Score	
Condition	Reliability of delivery systems	7	10	30
	Storage Facilities	6.8	10	
	Groundwater production facilities	6	10	
Capacity	Availability of Adequate Supply	8.2	10	40
	Pipelines	7.7	10	
	Pump stations	6.5	10	
	Storage facilities	9	10	
Operations	Water Quality	10	10	30
	Maintenance/ Repair and Replacement Funding Levels	6.7	10	
	Water Use Efficiency (Best Management Practices Implementation)	10	10	
Totals		77.9	100	

Water quality was found to exceed the regulatory standards and earned an A for most instances. However, problems do occasionally occur, requiring facilities to be temporarily or permanently removed from service. BMP implementation was also rated A. Maintenance/Repair and Replacement Funding Levels makes up a third of the grade for the "operation" element was rated a D+ (67 percent). The total grade for operation of the Districts' facilities was B+ (89 percent).

### Recommended Policy

Public Works recommended Policy and actual Waterworks infrastructure levels are as shown below. The recommended levels reflect our professional judgments regarding safe, cost effective and least life cycle cost asset management.

Element	Actual Grade	Recommended Grade
Condition	D+	B or better
Capacity	C+	B or better
Operation	B+	B or better

The following bullets outline the recommended route to go from the actual grade to the recommended level.

- Pursue programs to repair or replace older facilities, including undersized facilities requiring improved hydraulics.
- Acquire new resources and technologies to continue to meet stringent water quality standards.
- Study new sources of water and enhance groundwater management to stabilize a shrinking water supply.
- Foster public and political support to increase investments in order to maintain a safe, reliable water supply and distribution system.

### Investment Needs

Millions of dollars have been invested to ensure greater water supply and reliability through the construction of new reservoirs and conveyance pipelines over the past few decades. Nevertheless, both imported and groundwater supplies are at risk due to environmental concerns, water rights reallocations and contamination. The search for reliable, good quality water sources with minimum negative impact to existing systems is ongoing as growing population, water demand and water quality compliance remain challenges to overcome. As the Districts continue to grow, new supplies will be needed to offset anticipated losses in imported water associated with continued growth in other southern states. Future investment will also be needed to properly protect and manage local water resources and meet stringent future regulations.

The average Districts' Accumulated Capital Outlay Funds are approximately 15 million annually. Increases in the costs of gasoline, electricity and the costs of imported water have led to significant increases in operation of the system. Districts may need to keep increasing customer's water rates and seek grants and low interest loans for source of funding in order to meet increasing demands, repair and replace the water system infrastructure, maintain compliance with water quality regulations, and cover the increasing operation and maintenance costs. The following two tables depict current funding levels as well as funding required to reach the recommended policy of grade B or better.

**Table 4 - Total Current Funding \***

EXPENDITURES	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	5-YEAR TOTAL
Operation and Maintenance	\$16,410,256	\$18,401,000	\$22,670,000	\$20,860,000	\$21,338,000	\$99,076,256
Condition Improvements (Replacements)	\$6,403,386	\$3,974,000	\$1,349,000	\$299,000	\$49,000	\$16,410,256
Capacity Expansion	\$16,481,000	\$20,516,000	\$14,511,000	\$10,841,000	\$16,410,256	\$78,759,256
Total	\$39,294,642	\$42,891,000	\$37,927,000	\$32,000,000	\$37,797,256	\$189,909,898

\* Total Current Funding includes all funding planned for the five Districts and the Marina Del Rey Water System

**Table 5 - Additional funding to bring the grade for each District to a B**

EXPENDITURES	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	5-YEAR TOTAL
Operation and Maintenance**	\$679,716	\$713,702	\$749,387	\$786,856	\$826,199	\$3,755,860
Condition Improvements (Replacements) ***	\$11,001,600	\$11,001,600	\$11,001,600	\$11,001,600	\$11,001,600	\$55,008,000
Capacity Expansion ***	\$22,984,200	\$22,984,200	\$22,984,200	\$22,984,200	\$22,984,200	\$114,921,000
Total	\$34,665,516	\$34,699,502	\$34,735,187	\$34,772,656	\$34,881,999	\$173,684,860

Additional O&M Based on 2% of current System Replacement Cost for FY 2005-06 plus 5% annual increase for subsequent years

\*\*\* Improvement & Expansion expenditures were estimated based on System Needs Lists

### **Consequences**

The consequences of maintaining conditions and capacities of the water facilities at the present level will not only result in higher repair and maintenance cost but in further deterioration of the water storage and distribution systems. Most areas in Districts such as Acton, Val Verde and Antelope Valley areas have experienced steady growth over the past decade and continue to grow, making securing a reliable water source and replacing ageing systems major challenges facing the Districts. Capacity expansion and operation of the system, which includes compliance with new and emerging federal and state water quality standards cannot be met without the implementation of the recommended policy. The Districts have the ultimate responsibility for keeping the drinking water reliable and safe by adhering to standards and seeking improvements.

# Issue **BRIEF**

## FLOOD CONTROL

Grade

**B**



### Introduction

The condition assessment of each of the various components of the Flood Control District's (FCD) flood control system is based on the following elements and rating weights:

1. Condition of structural and operational features (70 percent weight)
2. Features' conformity to the Public Works' structural design standards and applicable State standards at the time these were constructed (15 percent weight)
3. Condition of security features (5 percent weight)
4. Condition of auxiliary components (5 percent weight)
5. Adequacy of existing rights of way (5 percent weight)

In addition, the functional adequacy of each of the various components of the FCD flood control system to accommodate the District's hydrologic standards is also assessed.

The components assessed are:

- **Channels:** The FCD operates and maintains approximately 500 miles of channels. Most reaches in the San Fernando Valley, Los Angeles Basin, and San Gabriel Valley were constructed in the 1940s and 1950s; some reaches date from the 1920s. Most reaches in the Santa Clarita area were constructed from the 1960s through the 1980s.
- **Storm Drains:** The FCD operates and maintains approximately 2,800 miles of storm drains. The major trunk lines were constructed in the 1950s and 1960s. Many lines connecting to them were constructed in the 1970s and 1980s. Many miscellaneous drains were originally constructed by the County's Road Department more than 40 years ago and were transferred to the FCD in the 1980s; most of these drains were not designed to the FCD standards.
- **Dams:** The FCD operates and maintains 15 dams, which were constructed from the 1920s through the 1930s.



- **Debris Basins:** The FCD operates and maintains approximately 160 debris basins, most of which are located in the San Fernando and San Gabriel Valley areas. Most of the debris basins were constructed from the 1930s through the 1970s. The debris basins located in the Santa Clarita area date from the 1980s are constructed as a part of housing developments. They are transferred to the FCD when the development is completed.
- **Debris Retaining Inlets:** The FCD operates and maintains over 200 debris retaining inlets. Many inlets date from the 1960s. Many inlets are constructed as a part of housing developments. They are transferred to the FCD when the development is completed.
- **Pump Plants:** The FCD owns, operates, and maintains 46 pump plants. Many of the pump plants date from the 1960s. The FCD also maintains approximately 20 pump plants owned by other entities.

The anticipated life span of flood control components is approximately 40 to 50 years, except for dams which is 100 years. The anticipated life span of auxiliary components (e.g., paint, access road surfacing) and security features (e.g., gates, fencing, alarms) is approximately 10 to 20 years.

### Current Condition

Based on the immediate knowledge of the Public Works' experienced engineers, operators, and maintenance supervisors on the overall condition of the system, the condition and functional adequacy grades for each component are as follows:

<b>Component</b>	<b>Component Element (%)</b>					<b>Weighted Value (%)</b>	<b>Condition Grade</b>	<b>Functional Adequacy Grade</b>
	<b>1 (70)</b>	<b>2 (15)</b>	<b>3 (5)</b>	<b>4 (5)</b>	<b>5 (5)</b>			
Channels	54	13	4	4	4	79	B	C
Storm Drains	56	11	4	5	3	79	B	C
Dams	50	12	2	3	4	71	C	B
Debris Basins	60	9	4	3	3	79	B	C
Debris Retaining Inlets	60	7	4	2	2	75	C	D
Pump Plants	48	10	5	4	5	72	C	C

The grades are defined as follows:

<b>Grade</b>	<b>Definition</b>
A Excellent	Meets current standards for purpose/function. Excellent overall condition. Overall weighted value of 89 percent-100 percent.
B Good	Meets current standards for purpose/function. Good overall condition with only minor amount of deferred maintenance required. Overall weighted value of 79 percent-88 percent.
C Fair	Meets original design criteria. Acceptable condition with moderate amount of deferred maintenance required. Overall weighted value of 68 percent-78 percent.
<b>Grade</b>	<b>Definition</b>
D Poor	Significant deviation in meeting original purpose/function (such as loss of capacity). Structural and/or operational elements require immediate attention. Significant effort required to modify for current standards. Overall weighted value of 55 percent-67 percent.
F Unsafe	Fails to meet current demands such that public health and safety could be compromised. Overall weighted value of <55 percent.

A more detailed assessment of the flood control system components is anticipated to be completed in 2006.

### Current Funding

<b>Expenditures</b>	<b>FY 2004-05</b>	<b>FY 2005-06</b>	<b>FY 2006-07</b>	<b>3-Year Total</b>
Operation and Maintenance (including NPDES compliance)	\$78,737,294	\$83,718,600	\$74,213,759	\$236,669,653
Repair and Rehabilitation	\$18,971,943	\$37,050,200	\$46,424,000	\$102,446,143
New Construction	\$28,116,335	\$25,079,240	\$18,754,200	\$71,949,775
<b>Total</b>	<b>\$125,825,572</b>	<b>\$145,848,040</b>	<b>\$139,391,959</b>	<b>\$411,065,571</b>

### Recommended Policy

Public Works recommends maintaining, repairing, restoring, and upgrading the flood control system components to the following levels to provide a safe, cost-effective system. The components that handle higher flows and thus protect a greater number of properties should be at a higher level than smaller facilities that do not protect as many properties.

<b>Component</b>	<b>Recommended Condition Grade</b>	<b>Recommended Functional Adequacy Grade</b>
Channels	B	B
Storm Drains	B	B
Dams	B	B
Debris Basins	B	B
Debris Retaining Inlets	C	B
Pump Plants	B	B

### Investment Needs

Public Works estimates it currently has 75 percent of its channels, 80 percent of its storm drains, 40 percent of its dams, 85 percent of its debris basins, 65 percent of its debris retaining inlets, and 85 percent of its pump plants that meet the recommended grades. Bringing the remaining facilities up to the recommended grades and maintaining the overall system at that level will require \$535,000,000 per year for next 5 years. The current funding of \$ 137,000,000 per year is inadequate to meet these needs.

### Consequences

Inadequate funding will hinder essential ongoing maintenance to the flood control infrastructure. Its effect will have a direct impact on efforts to prolong the life span of all components of this infrastructure. Moreover, failure to rehabilitate or replace system deficiencies in a timely manner will inevitably result in structural failures. Any failure has the potential to have disastrous consequences to the health and safety of the public and substantial liability to the County.

# Issue **BRIEF**

Grade

**C**



## STREETS AND HIGHWAYS

### Introduction

The condition assessment of each of the various components of Public Works' streets and highways system is based on the following elements:

- Pavement (Asphalt or Portland Cement Concrete): Public Works maintains over 3,100 centerline miles of roads which equate to over 500,000,000 square feet of pavement. Public Works maintains and improves its roads through several programs. The programs include resurfacing, reconstruct, slurry seal, and pavement patching. The pavement condition grade was determined using the windshield survey method, which is performed annually by our road Superintendents.
- Parkway Improvements (includes concrete sidewalk, curb, and gutter): Public Works maintains approximately 2,400 miles of sidewalk, 3,500 miles of curb, and 3,100 miles of gutter. Public Works performs semiannual inspections of our parkway infrastructure. Any conditions discovered requiring repair are promptly corrected through our temporary repair program then scheduled for a permanent repair. The condition grade is based upon the 2005 aesthetic ratings. These ratings are performed on several areas throughout the unincorporated areas and rate the appearance of the infrastructure. The correlation between aesthetics and condition in this case is very similar and; therefore, it is appropriate to use this data as an indication of the condition of these assets.

### Current Conditions

Based on the immediate knowledge of Road Maintenance Division's experienced engineers and field superintendents on the overall condition of each component the overall grades are as follows:

Component	Percent Meeting Grade					Overall Grade
	A	B	C	D	F	
Pavement	5	54	30	7	4	C+
Parkway Improvements	2	59	32	6	1	C+

The grades for the various components are defined as follows:

### Pavement

Grade	Definition
A Very Good	New or near new reconstructed or resurface roadways and other roads totally free of any signs of distress.
B Good	Roads in good condition showing only very minor hairline cracks or surface deterioration with relatively smooth riding quality. Most recently sealed streets would be in this category. Some streets needing slurry may be in this category.
C Fair	Roads in fair condition with moderate cracking or surface deterioration, which may have deteriorating riding qualities and some patching.
D Poor	Roads in poor condition with extensive cracking, patching, or other visible deterioration and/or poor riding quality but still in relatively serviceable condition.
F Very Poor	Roads with extremely deteriorated pavement requiring reconstruction or continuous maintenance to retain marginal serviceability

### Parkway

Grade	Definition
A Excellent	Facility shows no signs of deterioration or damage. There are no visible cracks, uplift, or ponded water.
B Good	More than 90 percent of the facility is in good condition. Minimal deterioration may be present. Minor cracking, uplift, or ponded water may exist.
C Fair	Deterioration, cracking, uplift, or pond water is evident through 50-75 percent of the facility.
D Poor	Deterioration, cracking, uplift, or pond water is evident through 50-75 percent of the facility.
F Very Poor	Deterioration, cracking, uplift, or pond water is evident through more than 50 percent of the facility. Asphalt patches have been placed in uplifted areas to assure the safety of the traveling public, but permanent repairs are required.

### Current/Future Funding

Expenditures	FY 2004-2005	FY2005-2006 (Estimated)	FY2006-2007 (Projected)	3-Year Total
<b>Pavement</b>				
Slurry	\$2,291,000	\$3,554,500	\$882,000	\$6,727,500
Resurface/Reconstruct	\$23,795,403	\$23,023,200	\$21,174,000	\$67,992,603
Other Maintenance	\$1,826,864	\$6,047,900	\$6,931,000	\$14,805,764
Sub-Total	\$27,913,267	\$32,625,600	\$28,987,000	\$89,525,867
<b>Parkway Improvements</b>				
Temporary repairs	\$1,590,297	\$1,157,700	\$1,366,000	\$4,113,997
Permanent Repairs	\$1,354,430	\$1,848,000	\$2,820,000	\$6,022,430
Sub-Total	\$2,944,727	\$3,005,700	\$4,186,000	\$10,136,427
<b>TOTAL</b>	<b>\$30,857,994</b>	<b>\$35,631,300</b>	<b>\$33,173,000</b>	<b>\$99,662,294</b>

### Recommended Policy

Public Works recommended and actual road infrastructure grades are shown below. The recommended grades reflect our professional judgments regarding safe, cost-effective, and least life cycle cost asset management. The actual grades reflect the dwindling and redirected revenues for transportation infrastructure projects and maintenance.

Component	Actual Grade	Recommended Grade
Pavement	C+	B
Parkway Improvements	C+	B

### Investment Needs

The annual estimated needs to maintain a steady state condition for both pavement and parkway is approximately \$153.7 million. To attain a recommended infrastructure grade of B would require an investment of \$251.5 million for pavement and \$490.5 million for parkway improvements. A 5-year program to meet these needs would require an additional annual investment of at least \$150 million. The current annual funding of approximately \$33 million is inadequate to meet these needs.

### Consequences

If the funding remains the same and does not increase or at least begin to approach minimum levels for a steady state, the grade for each of the road components will continue to decline. The pavement condition will decline at a higher rate than that of the parkway condition due to the shorter life expectancy of the asset. Pavements can last anywhere from 10 to 60 years, depending on classification and other factors. Parkway facilities, under favorable conditions, can last 100 years or more.



# Issue **BRIEF**

Grade  
**B-**



## STREET LIGHTING

### Introduction

Public Works maintains approximately 1,900 streetlights and 557 bridge soffit lights. None of the soffit lights are owned by the County. Most of the approximately 60,000 street lights in County unincorporated areas are owned and maintained by Southern California Edison Company and are not the subject of this assessment.

### Current Condition

While a formal condition assessment of Public Works-owned street, bridge, and soffit lights has not been conducted, the following subjective assessment adequately describes current condition:

<u>GRADE</u>	<u>DEFINITION</u>	<u>NO. OF LIGHTS</u>
A	Not in need of energy efficiency upgrade. Safe and efficient multiple circuit. Easily maintainable and reliable. Poles and fixtures in good condition.	786
B	Not in need of energy efficiency upgrade. Safe and efficient multiple circuit. Easily maintainable and reliable. Poles and fixtures in fair condition.	644
C	Candidate for energy efficiency upgrade. High-voltage series circuits with declining maintainability and reliability. Poles and fixtures in fair to poor condition.	119
D	High need for energy efficiency upgrade and system replacement. High-voltage series circuits with poor maintainability and reliability. Poles and fixtures in poor condition.	908

In accordance with this subjective assessment, the overall grade for street lighting is B-.

### Desired Condition and Investment Needs

The desired condition of Public Works-owned street lights is B. The estimated investment to upgrade street lights to this standard is approximately \$15 million.

Operation, maintenance, and capital improvement of both County and Edison street lights are funded primarily by the Unincorporated County Lighting Maintenance District. The revenue to finance the District comes from a share of the County's property tax revenue and from direct assessment on benefited properties. The \$15 million investment to upgrade the County street lights while continuing to adequately operate and maintain all of the District street lights may require an increase in the direct assessment to property owners.

### **Consequences**

Without the needed investment, the poorer rated street light systems will continue to decline in terms of energy efficiency, reliability, and maintainability.

# Issue **BRIEF**

## TRAFFIC SIGNALS

### Introduction

Public Works maintains approximately 1,600 traffic signals, 840 of which are wholly or partially owned by the County and 760 of which are wholly owned by the State or local agencies.

### Current Condition

The assessment of traffic signals is based on two criteria, **Condition** and **Operating Performance**.

**Condition** is assessed every 3 years and is measured on the following basis.

<u>GRADE</u>	<u>DEFINITION</u>	<u>NO. OF TRAFFIC SIGNALS</u>
A	New installation, generally less than 3 years old or newer, recently modified traffic signal equipment with new standards, new controller cabinet, new electrical service.	75
B	The majority of the traffic signal equipment in overall sound condition with minimal or no damage, with underground electrical service cabinet.	350
C	The majority of the traffic signal equipment in overall sound condition with minimal or no damage, with pole-mounted electrical service.	414
D	Traffic signal with obsolete controller, old or damaged traffic signal poles, damaged cabinets, damaged wiring, operating with temporary equipment or wiring, with pole-mounted or temporary electrical service.	0

In accordance with a condition assessment conducted in 2004 and 2005, the average **Condition** grade for all intersections is B-.

**Operating Performance** is measured by a traffic signal Level of Service (LOS) grade determined using the Intersection Capacity Utilization method. This method determines a volume to capacity ratio (V/C). Traffic volumes are actual vehicle counts obtained during typical morning and afternoon peak traffic conditions. A V/C ration less than 1.0 means the intersection has more capacity than vehicle volume passing through it. A V/C ratio of 1.0 or greater means the intersection has less capacity than volume.

Grade

**C**



LOS grades are assigned to ranges of V/C values as follows:

Level of Service (LOS)	V/C Ratio
A	< 0.60
B	0.6 to 0.7
C	0.7 to 0.8
D	0.8 to 0.9
E	0.9 to 1.0
F	> 1.0

At LOS A, the traffic signal operates freely with no vehicles waiting longer than one red indication. At LOS F, the volume of traffic is exceeding the capacity that the traffic signal is designed to operate at. There may be long queues of vehicles and delays may be up to several traffic signal cycles. LOS D or better is considered acceptable Operating Performance while LOS E and F are considered unacceptable.

The Operating Performance grade is based on traffic volume and analysis data contained in the most recent Metropolitan Transportation Authority Congestion Management Plan (CMP). The CMP includes an analysis of 15 intersections located on heavily traveled arterial streets as a proxy for the overall Operating Performance for County traffic signals. For the CMP study conducted in 2005, the percentage of the County intersections found to be operating at an acceptable LOS, averaged for the a.m. and p.m. peak periods, was 72 percent.

This equates to an **Operating Performance** grade of **C -**.

Combining the **Condition** and **Operating Performance** grades gives an overall grade of **C**.

#### *Desired Condition and Investment Needs*

The recommended standard grade for Condition of traffic signals is C or better. No significant capital investment is needed to address the Condition of traffic signals at this time.

The desired condition for **Operating Performance** is all traffic signals operating at LOS D or better, averaged for the a.m. and p.m. peak periods. As the vast majority of congested signalized intersections are located in urban areas, widening roadways, and acquiring right of way to increase capacity is infeasible and cost prohibitive in most cases. Therefore, the public interest is best served by programs to aggressively monitor and optimize the operating performance of traffic signals by adjusting and coordinating signal timing. To adequately monitor the operating performance of traffic signals and optimize signal timing, a substantial investment in Intelligent Transportation System technologies is necessary. An estimated capital investment of \$20 million is needed to instrument and upgrade County traffic signals to enable real-time remote monitoring of operating performance and implementation of signal timing adjustments. Most of this funding is being made available from the Metropolitan Transportation Authority through its grant-funded Call for Projects Program for traffic signal system improvements.

## **Consequences**

Without this dedicated capital investment in traffic signal technology, the County will be unable to network its traffic signals with adjacent cities to implement the improvements and management systems needed to facilitate smooth traffic flow along Countywide arterial corridors. The result would be a continuing increase in congestion, fuel consumption, motorist delay, and vehicle emissions.

# Issue **BRIEF**

## TRANSIT

### Introduction

Grade

**B-**



The County of Los Angeles Department of Public Works (DPW) maintains and operates a transit system which includes fixed-route bus service, Dial-a-Ride services, recreational and special event services, bus stop amenities, and Park-and-Ride lots in the unincorporated County areas.

Public Works-owned transit services are provided by contracting with private contractors or through agreements between the County and cities to achieve cost effectiveness. DPW administers five community fixed-route transit and 15 Dial-a-Ride services. DPW also provides seasonal and year-round, on-demand bus services to recreational events in the unincorporated areas of the County. These services provide unique transit options that are tailored to community needs. In most cases, the contractors provide the vehicles and maintenance facilities and County staff inspect them to ensure that they meet the service requirements. The Public Works-owned transit fleet consists of 32 vehicles.

Bus stop amenities provide weather protection and wait-time comfort for transit patrons. Currently, there are more than 2,000 Public Works-owned and maintained bus stops: 650 of them have shelters and approximately 1,200 have benches. Most existing advertising shelters provided by the advertising agreement were generically designed for low cost and low maintenance.

The County has four permanent Park-and-Ride lots.

### Current Condition

County staff routinely evaluates existing fixed route and Dial-a-Ride services to address service quality and expansion needs. The unincorporated County areas include many rural and sparsely populated communities, which do not have any transit services at this time. The average DPW-owned vehicle age is approximately 4.3 years old. Additionally, 2 are scheduled for rehabilitation, and 18 are being evaluated for replacement.

DPW was awarded State and Federal grants to improve its bus stop amenities program. The DPW completed a contract to install 223 bus stop shelters and other amenities (benches and trash receptacles) Countywide, including up to 70 bus stops in the rural North County areas. These shelters were aesthetically designed for each community to provide protection against weather elements and comfort to encourage the use of public transit.

One positive aspect of the unincorporated County bus shelter program is that the advertising space available on them generates revenue that helps offset the cost of maintenance. DPW receives a guaranteed minimum payment of \$100,000 per year or 15 percent of the advertising revenue, whichever is greater, to administer and finance the bus shelter program.

The condition of the Public Works-owned and maintained Park-and-Ride lots varies according to the age of the facility. The Vincent Grade-Acton lot was completed 5 years ago. The Cahuenga lot in Studio City was resurfaced in 2002. The Via Verde and Fairplex lots were constructed more than 10 years ago and are in need of resurfacing. Additionally, the Via Verde lot is in need of expansion to improve its capacity.

#### *Component Grading*

Component	Percent Meeting Grade					Overall Grade
	A	B	C	D	F	
Fixed Route		60	40			<b>B-</b>
Dial-A-Ride		60	40			<b>B-</b>
Recreational and Special Event		99		1		<b>B</b>
Bus Stop Amenities	10	10	80			<b>C+</b>
Park-and-Ride		50	50			<b>C+</b>

The age and condition of the transit vehicle fleet, bus stop amenities, Park-and-Ride lots, and the quality of passenger service were evaluated. Overall, the Public works-owned and maintained transit infrastructure was given a **B-** grade.



The grades are defined below:

<b>Grade</b>	<b>Definition</b>
<b>A</b> Excellent	Zero to very few capacity, structural, or operational problems. Components will require very little to no repairs within the next 10 years. Services met 100 percent on time performance. Fixed route services achieve 40 boardings per hour. Dial-a-Ride service vendors meet maximum bonus criteria.
<b>B</b> Good	Few capacity, structural, or operational problems exist. Components will require some repairs within the next 5 to 10 years. No major repairs or reconstruction is anticipated. Services met 99% on time performance. Fixed route services achieve 30 boardings per hour. Dial-a-Ride service vendors meet first-tier bonus criteria.
<b>C</b> Fair	Some capacity, structural, or operational problems exist. Components will require major repairs in the next 5 to 10 years and currently require extensive annual or seasonal maintenance. Major repair or reconstruction needed within 5 to 10 years. Services met 90 percent on time performance. Fixed route services achieve 15 boardings per hour. Dial-a-Ride service vendors meet target ridership criteria.
<b>D</b> Poor	A significant number of capacity, structural, or operational problems exist. Extensive ongoing maintenance is required to maintain serviceability of the component, and major repair or reconstruction is anticipated in less than 5 years. Services are below 90 percent on time performance. Fixed route services are less than 15 boardings per hour. Dial-a-Ride service vendors fall below penalty criteria.
<b>F</b> Failing	The component has failed or is facing imminent failure. Component requires major repair or reconstruction to become serviceable. Services are below 80 percent on time performance. Fixed route services are less than 10 boardings per hour. Dial-a-Ride service vendors do not meet minimum ridership criteria.

### Recommended Condition

Public Works aggressively pursues Federal and State grants to fund transit services and transit capital improvements. Public Works strives to achieve at the following minimum level:

<b>Component</b>	<b>Recommended Grade</b>
Fixed Route	B
Dial-A-Ride	B
Recreational & Special Event	B
Bus Stop Amenities	B
Park-and-Ride	A

Currently, the overall grade for recreational and special event transit services is maintained at the recommended grade level. This is a result of persistent monitoring of our contract vendors and close coordination with our patrons.

### **Investment Needs**

Awareness of the need for transit security has been heightened after the September 11, 2001, tragedy. Currently, unincorporated County transit service security is extremely limited. Security improvements, such as on-board monitoring equipment, vehicle locators, and other measures need to be installed at an estimated cost of \$2 million.

The replacements of the vehicles exceeding their useful service years are estimated at \$2 million.

Park-and-Ride lot usage is growing. More Park-and-Ride facilities are needed to increase parking capacity and mitigate the adverse impacts of population growth on air quality and traffic congestion in the unincorporated County. The County is actively involved in the development of Park-and-Ride lots to encourage commuters to vanpool and utilize public transit systems. Identifying appropriate sites and building new lots will require approximately \$10 million. Rehabilitation of two aging Park-and-Ride lots is estimated at \$2 million.

The County is also pursuing the installation of more aesthetically pleasing and comfortable bus shelters and benches to improve service quality for patrons and make the sites more attractive to communities. Trash receptacles must also be placed at bus stops to fulfill the County's legal requirements to reduce litter and prevent trash from being washed into the storm drain system and eventually the ocean. The estimated cost for these improvements is \$20 million.

The County is preparing to conduct transit-needs studies in all unincorporated County areas to improve services and identify unmet needs, including the rural areas. Such studies will cost \$1 million.

We estimate that it would cost \$35 million to \$40 million to bring all components of the transit services to the recommended grades. The improvements would include heightening security measures, adding bus stop amenities, updating aging transit fleet, and upgrading service contracts. We also need to increase capacity by locating and developing more Park-and-Ride lots, procuring new vehicles, and increasing service frequency.

### **Consequences**

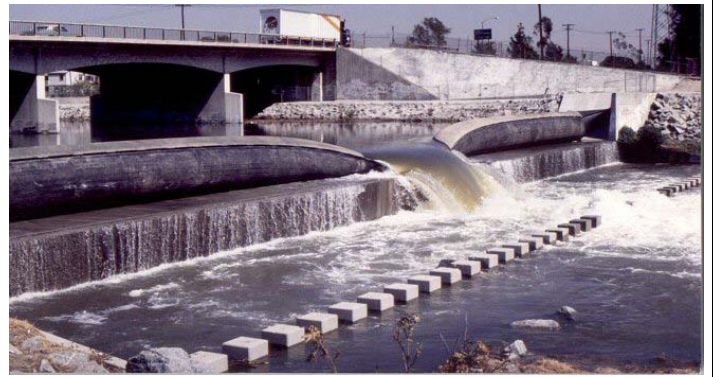
Transit services are depended upon more and more to ease traffic congestions, to improve air quality, and to provide mobility for County residents. Failure to meet the recommended level of transit grades is a disservice to County residents and contributes to the deterioration of the quality of life of County residents.

We will continue pursuing different grant options to leverage our available Proposition A Local Return Transit funds for improving transit services. There are also needs of fundamental policy changes at the Los Angeles County Metropolitan Transportation Authority to support local transit providers.

# Issue **BRIEF**

Grade

**D**



## URBAN RUNOFF

Urban runoff is water that flows off city streets into the storm drain system and flood control channels to the ocean. The flood control system was designed to carry stormwater to the ocean as quickly as possible to protect the public from flooding. As runoff passes over parking lots, sidewalks, lawns, and streets, it picks up litter, vehicle residues, pet waste, leaves, cigarette butts, fertilizers, and pesticides. The water reaches the ocean without treatment and contributes to ocean pollution and beach closures. The County of Los Angeles Department of Public Works assessed the water quality of the area's major watersheds or drainage areas. The six major watersheds are Los Angeles River, San Gabriel River, Dominguez Channel, Ballona Creek, Malibu Creek, and Santa Clara River. Santa Monica Bay was also assessed separately. The assessment is a snapshot of how the urban runoff water quality meets California's water quality objectives.

### Existing Urban Runoff

The assessment of the water quality began with an assessment of each major watershed within the County of Los Angeles. Four pollutants were used as indicators of the overall water quality in the watershed: bacteria, metals, nutrients, and trash. The grades were based on the degree to which the pollutant impaired the beneficial uses of the specific waterbody. An A was assigned if the waterbody was not listed as impaired for the particular pollutant. A B was assigned if the waterbody was listed as impaired, a Total Maximum Daily Load (TMDL) had been adopted, and interim targets reflecting more than a 50 percent improvement in the pollutant load are being met. A "C" was assigned if the waterbody was listed as impaired, a TMDL had been adopted, and interim targets reflecting less than a 50 percent improvement in the pollutant load are being met. A "D" was assigned if the waterbody was listed as impaired, a TMDL had been adopted, but interim targets have not been met. An F was assigned if a waterbody was listed as impaired but no TMDL had been adopted. An overall grade for the watershed was given as the average of the four pollutant specific grades assigned to the watershed. The Countywide grade is the average grade of all the individual watershed grades.

### Effectiveness

Under the Clean Water Act, the County of Los Angeles and cities in the County have been implementing activities and programs to improve water quality since 1990. The Los Angeles Regional Water Quality Control Board regulates the County and the cities in implementation of various Best Management Practices (good housekeeping procedures to prevent urban runoff pollution), public outreach and education for residents and business, inspections of potentially polluting facilities and enforcement of laws against violators, increased maintenance, and water treatment devices. The County of Los Angeles is responsible for unincorporated areas and the roads, highways, and flood control systems it operates and maintains. The flood control and road systems are complex and interwoven throughout the County. The Antelope Valley (North County, Palmdale, Lancaster) is not included in this assessment because it is not yet regulated in the same way.

Efforts to comply with water quality standards by the County, Cities, State (Caltrans), and Federal Government (U.S. Army Corps of Engineers, Forest Service) vary significantly. Water quality in the watersheds cannot be linked directly to the action or inaction of a given entity because water flows through various jurisdictions and is affected by a multitude of factors, including wildlife contamination and contamination by airborne materials. The County operates and maintains the majority of large and regional flood control systems, but in most cases has little or no control over land use or enforcement authorities nor maintenance schedules.

### **Final Grade**

The overall urban runoff grade for the County of Los Angeles is **D**.

### **Investment Needs**

The cost to the County of Los Angeles for implementation of the current water quality regulations is approximately \$65 million dollars annually. The current annual cost for the County as a region is approximately \$225 million. This does not include the cost to meet existing and proposed standards adopted by the Regional Water Quality Control Board. Estimates of the implementation costs for these regulations vary between \$3 billion and \$300 billion.

### **Recommendations**

- Support funding to implement measures to meet water quality objectives.
- Promote sound scientific research for setting and meeting water quality standards.
- Aggressively pursue grant opportunities.
- Seek partnerships with the Federal and State governments, cities, local agencies and environmental groups to share findings.
- Support water quality regulations based on the maximum extent practicable standard contained in the Clean Water Act for Municipal Stormwater Permits.

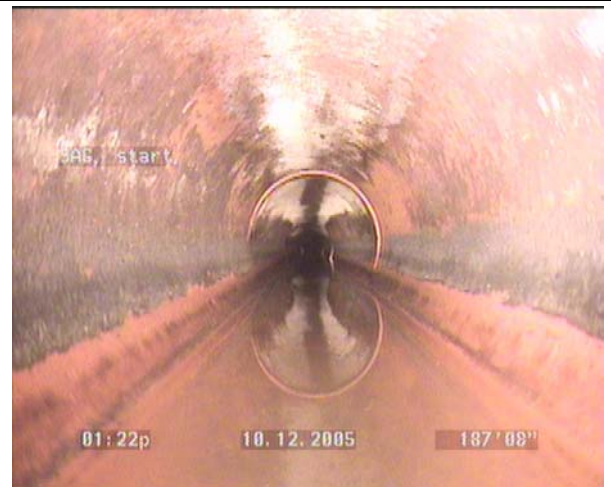
### **Consequences**

The consequence for failing to reach an A is that the County would be violating State and Federal law. The current penalty for this type of violation is a fine of up to \$31,500 per day per occurrence.

# Issue **BRIEF**

Grade

**B-**



## WASTEWATER SYSTEM

The wastewater collection and treatment system operated by the County consists of 5,100 miles of gravity flow sewers, 147 pump stations, and four small wastewater treatment plants. The condition assessment for the wastewater system individually rates each of these components with an overall letter grade based upon the individual scores.

### **Sewer Collection System** **(Gravity Flow)**

#### Introduction

The gravity flow sewer collection system that is operated and maintained by the Public Works consists of 5,100 miles of sewer pipes located within the unincorporated County area and 40 cities that make up the Sewer Maintenance Districts. The majority of the collection system is composed of 8-inch diameter vitrified clay pipe. Vitrified clay pipe is an inert material that is highly resistant to corrosion and abrasion and has a life expectancy of over 100 years.

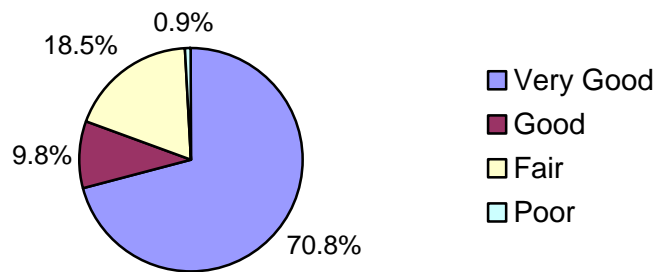
#### Current Condition and Assessment Approach

A comprehensive closed circuit television inspection and condition assessment program was initiated during the current Fiscal Year 2005-06 to determine the condition and structural integrity of the gravity flow sewer collection system. While results from this 10-year program are not yet available, the subjective assessment shown in Table 1 adequately describes the current condition of the sewers.

**Table 1**

Category	Condition	Miles of sewer	Category Definition
A	Very Good	3,610	No annual cleaning required.
B	Good	500	Annual cleaning required.
C	Fair	944	Requires multiple cleanings.
D	Poor	46	Sewer repairs required within 2 years.
F	Emergency	0	Emergency repairs required.

**Chart 1**  
**Condition Assessment of Collection System**



The condition of the gravity flow collection system is depicted graphically in Chart 1. The system has a combined overall condition rating of **B+**. The overall weighted average score for the collection system is 3.50 on a scale of 1 to 4. However, 19.4 percent of the collection system, which represents approximately 990 miles of sewers, has reached a point where repairs and rehabilitation are needed to keep the system functioning properly.

### **Funding Requirements**

Approximately \$18 million is needed annually to keep the gravity flow sewer collection system free from debris and restrictions that impede flow. The estimated capital improvement cost to bring all elements of the collection system to a Public Works-recommended grade of B or better is roughly \$260,000,000.

## **Sewer Collection System (Pump Stations and Force Mains)**

### **Introduction**

Public Works operates and maintains 90 pump stations and 33 miles of sewer force mains within the unincorporated County area and 40 cities that make up the Sewer Maintenance Districts. Also included in the pump station assessment are 57 pump stations that are maintained through Department Service Orders for the County Departments of Beaches and Harbor and Parks and Recreation.

### **Current Condition and Assessment Approach**

A comprehensive inspection and assessment of the pump stations and force mains has never been performed. However, based upon general observations from maintenance staff along with the maintenance history and the known wet-weather flow capacity for each station, a subjective assessment, as shown in Table 2 below, adequately describes the current condition of the pump stations and force mains.



Table 2

CATEGORY	CONDITION	PUMP STATIONS	CATEGORY DEFINITION
A	Very Good	11	Meets future peak wet weather flow requirements. Requires only routine maintenance.
B	Good	31	Meets current peak wet weather flow requirements. Requires only routine maintenance.
C	Fair	58	Meets current dry weather flow requirements. No capacity for peak wet weather flows. Requires repeated observation/maintenance.
D	Poor	45	Meets current dry weather flow requirements. No capacity for peak wet weather flows. Requires extensive observation/maintenance. Needs significant improvements.
F	Fail	2	Insufficient capacity for dry weather flows. Does not meet current design standards. Requires continuous observation/maintenance.
Total		147	

**Chart 2**  
**Condition Assessment of Pump Stations**



The pump stations in the County have a combined overall condition rating of **C**. The overall weighted average score for the pump stations is 2.0 on a scale of 1 to 4. However, 105 pump stations require significant improvements to restore capacity, upgrade deteriorated conditions, or provide system redundancy to keep the stations functioning properly at all times.

### Funding Requirements

Approximately \$5 million is needed annually to keep the existing pump stations and force mains operating in an acceptable manner, which does not include improvements to their current condition. The estimated capital improvement cost to bring all elements of the system to a Public Works-recommended grade of B or better is approximately \$158 million.



## **Wastewater Treatment Plants**

### **Introduction**

Public Works is responsible for the operation and maintenance of four very small wastewater treatment plants. The combined capacity of the four plants is 420,000 gallons per day. In comparison, the County Sanitation Districts of Los Angeles County's combined capacity is 600,000,000 gallons per day. Three of the treatment plants managed by the Department are located in or near the City of Malibu and one treatment plant is located at Lake Hughes. The treatment plants in Malibu were originally built as temporary wastewater treatment solutions until a regional sewer system was developed. Their design and functionality reflect this temporary idea.

### **Current Condition and Assessment Approach**

The wastewater treatment plants are unique in their design and operation. Therefore, each plant will be graded individually with an overall letter grade to be given based upon the individual grades. While a comprehensive condition assessment program does not exist for the treatment plants, the following is a subjective assessment that adequately describes the condition of the treatment plants.

#### **Malibu Mesa Wastewater Reclamation Plant**

The Malibu Mesa Wastewater Reclamation Plant is a tertiary wastewater treatment facility. The capacity of the Plant is 200,000 gallons per day (gpd) of domestic wastewater. The Malibu Mesa Plant was rehabilitated in 1998. The physical condition of the plant is good however, the treatment process struggles to produce high-quality effluent in compliance with the state permit requirements. Thus the Malibu Mesa Wastewater Reclamation Plant would be a "C".

#### **Malibu Water Pollution Control Plant**

The Malibu Water Pollution Control Plant is a secondary wastewater treatment facility. The capacity of the plant is 51,000 gpd of domestic wastewater. The Malibu plant was rehabilitated in 2001. The physical condition of the plant is very good and the plant is in significant compliance with permit requirements. The overall condition of the Malibu Water Pollution Control Plant would be B.

#### **Lake Hughes Community Wastewater Treatment Facility**

The Lake Hughes Community Wastewater Treatment Facility is a secondary wastewater treatment facility. The capacity of the plant is 93,500 gpd. The Lake Hughes Facility was built in 1990. The facility has reached approximately 50 percent of its useful life so the physical condition would be considered fair. The facility generally meets permit requirements except during wet-weather events so operationally the facility would also rate fair. Therefore, the overall condition of the Lake Hughes Community Wastewater Treatment Facility would be C.

#### **Trancas Water Pollution Control Plant**

The Trancas Water Pollution Control Plant is a secondary wastewater treatment facility. The capacity of the plant is 75,000 gpd. The Trancas Plant was originally constructed in 1964 and reconstructed in 1979. The plant has greatly exceeded its useful life and is severely deteriorated. Operationally, the plant struggles to meet permit requirements. The overall condition of the Trancas Water Pollution Control Plant would be a D.

The following table provides the summary of the assessment ratings for the wastewater treatment plants.

CATEGORY	CONDITION	NUMBER OF WASTEWATER TREATMENT PLANTS	CATEGORY DEFINITION
A	Very Good	0	Meets future peak wet weather flow requirements. Requires only routine maintenance. It is in full permit compliance.
B	Good	1	Meets current peak wet weather flow requirements. Requires only routine maintenance. It is in significant permit compliance.
C	Fair	2	Meets current dry weather flow requirements. No capacity for peak wet weather flows. Requires constant observation/maintenance. It is in partial permit compliance.
D	Poor	1	Meets current dry weather flow requirements. No capacity for peak wet weather flows. Requires extensive observation/maintenance. Needs significant improvements. It is not in permit compliance.
Total		4	

The combined condition rating for the wastewater treatment plants would be a **“C”**. The overall weighted average score is 2.0 on a scale of 1 to 4.

### Funding Requirements

Approximately \$2 million is needed annually to keep the existing treatment plants operating in an acceptable manner, which does not include capital improvements. The Trancas Water Pollution Control Plant is scheduled for rehabilitated in the 2006 calendar year. The total estimated rehabilitation cost is \$4.5 Million. The other two plants would require approximately \$9 Million to get them in full permit compliance. The total funding needs to bring all components of the treatment plants to a Public Works-recommended grade of B or better is approximately \$13.5 million.

### *Final Grade*

Applying an equal weight to each of these conditions, the overall grade for the wastewater system is a **B-**.

### Investment Needs

The estimated annual Operation & Maintenance budget for the wastewater system is \$25 Million. The overall capital improvement costs to bring all facilities to a Public Works-recommended grade of B or better is estimated to be between \$400 million and \$450 Million.

## Consequences

The consequences of not providing the necessary funding to support the capital improvements will allow for an accelerated deterioration of those sections of the infrastructure below the B grade level. This will prevent the overall wastewater collection system from functioning as designed and potentially lead to sanitary sewer overflows and the corresponding risk to public health and the environment.

# Issue **BRIEF**

Grade

**C**



## **WATER CONSERVATION**

### Introduction

The condition assessment of each of the various components of the Flood Control District's (FCD) water conservation system is based on the following elements and rating weights:

1. Condition of structural and operational features (60 percent weight)
2. Structural features' conformity to Public Works current design standards (15 percent weight)
3. Ability to meet future groundwater use sustainability (10 percent weight)
4. Condition of security features (5 percent weight)
5. Condition of auxiliary features (5 percent weight)
6. Adequacy of existing rights of way (5 percent weight)

In addition, the functional adequacy of the spreading grounds to accommodate their design capacities and the seawater barriers to retard seawater intrusion into local groundwater basins is assessed.

The components assessed are:

- **Spreading Grounds:** The FCD owns, operates, and maintains 26 spreading grounds comprised of 1,720 wetted acres. Public Works also operates the Tujunga Spreading Grounds, comprised of 90 wetted acres, on behalf of the City of Los Angeles. Approximately 320 wetted acres are located in the San Fernando Valley (San Fernando Groundwater Basin), 630 wetted acres in the San Gabriel Valley (primarily in the Main San Gabriel and Raymond Groundwater basins), and 860 wetted acres in the Los Angeles Coastal Basin area (Central Groundwater Basin). Most of these facilities were established in the 1940s and 1950s, in several cases to offset the decrease in groundwater recharge resulting from the concrete lining of major streams. The operational capabilities of several of the larger spreading ground facilities were improved in the 1980s and early 1990s. The FCD has no spreading grounds in the Santa Clara River and Antelope Valley areas. The FCD has no water conservation facilities in several major watersheds within the District.

The anticipated life span of structural components is approximately 40 to 50 years. The anticipated life span of secondary (e.g., paint, access road surfacing, trash racks) and security features (e.g., gates and fencing) is approximately 10 to 20 years.

- **Seawater Barriers:** The FCD owns, operates, and maintains three seawater barrier projects to stop or retard seawater intrusion in the County's coastal groundwater basins. The Alamitos Barrier Project, located in the eastern area of Long Beach, is comprised of 43 injection wells, 42 vaults, and 7 miles of water supply lines. It serves the Central Groundwater Basin in the County of Los Angeles and the Coastal Plain of the Orange County Groundwater Basin. The Dominguez Gap Barrier Project runs from the Wilmington area east into Long Beach and is comprised of 94 injection wells, 77 vaults, one micro filtration system, and 8.5 miles of water supply lines. The West Coast Basin Barrier project runs from El Segundo south to Torrance and is comprised of 153 injection wells, 150 vaults, and 14.4 miles of water supply lines. The Dominguez Gap and West Coast Barrier Projects serve the County's West Coast Groundwater Basin. The first barrier project was constructed in the late 1950s with two additional projects constructed in the 1960s and 1970s. The Dominguez Gap Barrier Project underwent a major expansion from 2001 to 2004. The West Coast Basin Barrier Project was modified in 1995 to replace 50 percent of the injection water with recycled water.

The anticipated life span of concrete structural components is approximately 40 to 50 years. The anticipated life span of the structural components of the injection wells is 50 years and the life span of the water supply lines is 60 years. The anticipated life span of secondary (e.g., paint, access road surfacing) and security features (e.g., gates, fencing, lighting) is approximately 10 to 20 years.

### Current Condition

Based on the immediate knowledge of the Public Works' experienced engineers, operators, and maintenance supervisors on the system's condition, the condition and functional adequacy grades are as follows:

<b>Component</b>	<b>Component Element (%)</b>						<b>Weighted Value (%)</b>	<b>Condition Grade</b>	<b>Functional Adequacy Grade</b>
	<b>1 (60)</b>	<b>2 (15)</b>	<b>3 (10)</b>	<b>4 (5)</b>	<b>5 (5)</b>	<b>6 (5)</b>			
Spreading Grounds	45	7	7	3	3	5	70	C	C
Seawater Barriers	41	11	8	3	3	3	69	C	C

The grades are defined as follows:

<b>Grade</b>	<b>Definition</b>
A Excellent	Meets original purpose/function. Can meet anticipated future demands without modification. Overall value of 89 percent-100 percent.
B Good	Meets original purpose/function. Could be modified with moderate effort to meet future demands. Overall value of 79 percent-88 percent.
C Fair	Currently meets minimum required demands. Significant effort required to modify for future demands. Overall value of 68 percent-78 percent.
<b>Grade</b>	<b>Definition</b>
D Poor	Significant deviation in meeting original purpose/function (such as loss of capacity). Unlikely to facilitate modification for future demands. Overall value of 55 percent-67 percent.
F Unsafe	Fails to meet either current or projected demands such that public health and safety could be compromised. Overall value of <55 percent.

A more detailed assessment of the flood control system components is anticipated to be completed in 2006.

### Current Funding

<b>Expenditures</b>	<b>FY 2004-05</b>	<b>FY 2005-06</b>	<b>FY 2006-07</b>	<b>3-Year Total</b>
Operation and Maintenance	\$8,154,305	\$9,472,200	\$9,674,000	\$27,300,605
Repair and Rehabilitation	\$1,705,525	\$3,994,460	\$1,320,000	\$7,019,985
New Construction	\$7,486,740	\$4,002,150	\$1,081,000	\$12,569,890
Total	\$17,346,570	\$17,468,810	\$12,075,000	\$46,890,380

The budget for water conservation for Fiscal Year 2006-07 is lower than prior years and likely to remain lower due to a larger portion of the Flood Fund budget needed to support escalating costs of the flood control system.

### Recommended Policy

Public Works recommends maintaining, repairing, restoring, and upgrading the water conservation system components to the following levels to provide a safe, cost-effective, efficient water conservation system.

Component	Recommended Condition Grade	Recommended Functional Adequacy Grade
Spreading Grounds	C	B
Seawater Barriers	B	B

### Investment Needs

As stated above, Public Works estimates the condition and functional adequacy of its spreading grounds and seawater barriers rate a C. Bringing up these facilities to the recommended grade and maintaining the overall system at the recommended levels will require an annual investment of \$20,000,000 for next 5 years. The current funding of \$12,000,000 per year is inadequate to meet these needs.

### Consequences

Without the needed investment, the spreading grounds will continue to deteriorate, reducing our ability to conserve water for use by County residents. Seawater barrier operations will likely be disrupted for extended periods of time as costly emergency repair work on water supply line failures will be more common. Consequently, the groundwater aquifers will be subject to saltwater contamination, again reducing the amount of fresh water available to County residents.